

GOVERNMENT OF TELANGANA
A B S T R A C T

LET&F Department – The Factories Act, 1948 and the Telangana Factories Rules, 1950 – Amendment to “Schedule-XXVII–Operations involving High Noise and Vibrations Levels” under Rule 95 of the Telangana Factories Rules, 1950 – Final Notification – Orders – Issued.

LABOUR EMPLOYMENT TRAINING & FACTORIES (LABOUR-II) DEPARTMENT

G.O.Ms.No. 3

Dated: 28-01-2020
Read the following:

1. From the Director of Factories, Telangana, Hyderabad, Lr.No.MAH/2941/2014, Dated: 24.11.2018 & 04.12.2018.
2. G.O.Rt.No.540, LET&F (Lab-II) Department, Dated: 03.12.2019.
3. From the Director of Factories, Telangana, Hyderabad, Lr.No.B2/2941/2019, Dated: 21.01.2020.

ORDER:-

The Director of Factories, Telangana, Hyderabad in his letter 1st read above, has submitted proposal for issue of Preliminary Notification for amendment of “Schedule-XXVII–Operations involving high Noise Levels and Vibration Levels” under Rule 95 of the Telangana Factories Rules, 1950.

2. In the G.O. 2nd read above, the Government have issued Preliminary Notification as required under section 115 (1) of the Factories Act, 1948 (Central Act No.63 of 1948) calling for objections / suggestions within the period of 45 days from the date of publication of the notification in the Telangana Gazette to amend “Schedule-XXVII–Operations involving high Noise Levels and Vibration Levels” under Rule 95 of the Telangana Factories Rules, 1950. The same was published in the Telangana Gazette vide Notification No.30, Part-I Extraordinary, Dated: 05.12.2019.

3. In the letter 3rd read above, the Director of Factories, Telangana, Hyderabad has reported that since no objections / suggestions are received so far from any person or institute or management even after completion of 45 days period from the date of issue of the preliminary notification requested the Government to issue the final Notification in the matter.

4. Accordingly, the following notification shall be published in the extraordinary issue of Telangana Gazette, dated: 30.01.2020:

FINAL NOTIFICATION

In exercise of the powers conferred by section 112 of the Factories Act, 1948 (Central Act 63 of 1948), the Government of Telangana hereby makes the following amendments to “Schedule-XXVII–Operations involving High Noise and Vibrations Levels” under Rule 95 of the Telangana Factories Rules, 1950 since the objections / suggestions have been called for vide G.O.Rt.No.540, LET&F (Lab-II) Department, Dated: 03.12.2019 published in Telangana Gazette vide Notification No.30, Part-I Extraordinary, Dated: 05.12.2019 in terms of sub-section (1) of section 115 of the said Act and no objections / suggestions have been received within the stipulated period:-

AMENDMENT

In the said rules,-

(i) In rule 95, in sub-rule (1), for item 27 the following item shall be substituted,-

Contd.....2

“27.Operations involving High Noise and Vibration levels.”;

(ii) For Schedule XXVII, the following Schedule shall be substituted,-

**“Schedule-XXVII
Operations involving High Noise and Vibration levels**

Part-A High Noise Levels:

- 1. Application:** This Part of the schedule shall apply to all operations in any manufacturing process having high noise level.
- 2. Definitions:** For the purpose of this schedule –
 - (a) “Noise” means any unwanted sound.
 - (b) “High noise level” means any noise level measured on the A-weighted scale is 85 dB or above.
 - (c) “Decibel” means one-tenth of “Bel” which is the fundamental division of a logarithmic scale used to express the ratio of two specified or implied quantities, the number of “Bels” denoting such a ratio being the logarithm to the base of 10 of this ratio. The noise level (or the sound pressure level) 6 corresponds to a reference pressure of 20 x 10 Newton per square meter or 0.0002 dynes per square centimeter which is the threshold of hearing, that is, the lowest sound pressure level necessary to produce the sensation of hearing in average healthy listeners. The decibel in abbreviated form is dB.
 - (d) “Frequency” is the rate of pressure variations expressed in cycles per second or hertz.
 - (e) “dBA” refers to sound level in decibels as measured on a sound level meter operating on the A-weighting net work with slow meter response.
 - (f) “A-weighting” means making graded adjustments in the intensities of sound of various frequencies for the purpose of noise measurement, so that the sound pressure level measured by an instrument reflects the actual response of the human ear to the sound measured.
- 3. Protection against Noise:-**
 - (1) In every factory, suitable, a suitable engineering control or administrative measures shall be taken to ensure, so far as is reasonably practicable, that no worker is exposed to sound levels exceeding the maximum permissible noise exposure levels specified in Tables 1 and 2.

**Table 1
Permissible Exposure in Cases of Continuous Noise**

Total time of exposure (continuous short term exposures)	Sound pressure level in or a number of dBA per day, in hours
8	85
6	87
4	90
3	92
2	95
1 ½	97
1	100
¾	102
½	105
1/4	110

Note: 1. No exposure in excess of 110 dBA is to be permitted.

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2. For any period of exposure falling in between any figure and the next higher or lower figure as indicated in column 1, the permissible sound pressure level is to be determined by extrapolation on a proportionate basis.

Table 2
Permissible Exposure Levels of Impulsive or Impact Noise

Peak sound pressure level in dB	Permitted number of impulses or impact per day
140	100
135	315
130	1,000
125	3,160
120	10,000

Notes:1. No exposure in excess of 140 dB peak sound pressure level is permitted.

2. For any peak sound pressure level falling in between any figure and the next higher or lower figure as indicated in column 1, the permitted number of impulses or impacts per day is to be determined by extrapolation on a proportionate basis.
- (2) For the purposes of this schedule, if the variations in the noise level involve maximum at intervals of one second or less, the noise is to be considered as a continuous one and the criteria given in Table 1 would apply. In other cases, the noise is to be considered as impulsive or impact noise and the criteria given in Table 2 would apply.
- (3) When the daily exposure is composed of two or more periods of noise exposure at different levels their combined effect should be considered, rather than the individual effect of each. The mixed exposure should be considered to exceed the limit value if the sum of the fractions

$$\frac{C_1}{T_1} + \frac{C_2}{T_2} + \dots + \frac{C_n}{T_n} \text{ exceeds unity, -}$$

Where the C1,C2 etc. indicate the total time of actual exposure at a specified noise level and T1, T2, etc. denote the time of exposure of less than 90 dBA may be ignored in the above calculation.

4. (1) Where it is not possible to reduce the noise exposure to the levels specified in sub-clause (1) by reasonably practicable engineering control or administrative measures, the noise exposure shall be reduced to the greatest extent feasible by such control measures, and each worker so exposed shall be provided with suitable ear protectors as per relevant National or International Standards so as to reduce the exposure to noise to the levels specified in sub-clause 3(1).
- (2) The Occupier shall provide personal hearing protectors to the workers
- (a) So as to eliminate the risk to hearing or to reduce the risk to as low a level as is reasonably practicable.
 - (b) After consultation with the employees concerned or their representative
 - (c) Ensure the hearing protectors is full and properly fitted, periodically checked for the effectiveness, used and maintained in good working order and repair.
 - (d) Ensure that workers are given periodical training in the use, care and maintenance of the personal hearing protectors.

5. Where the ear protectors provided in accordance with sub-paragraph 3(4) and worn by a worker cannot still attenuate the noise reaching near his ear, as determined by subtracting the attenuation value in dBA of the ear protectors concerned from the measured sound pressure level, to a level permissible under Table 1 or Table 2 as the case may be, the noise exposure period shall be suitably reduced to correspond to the permissible noise exposures specified in sub-paragraph (1).
6. (a) In all cases where the prevailing sound levels exceed the permissible levels specified in sub-paragraph (1) there shall be administered an effective hearing conservation programme which shall include among other hearing conservation measures, pre-employment and periodical auditory surveys conducted on workers exposed to noise exceeding the permissible levels, and rehabilitation of such workers either by reducing the exposure to the noise levels or by transferring them to places where noise levels are relatively less or by any other suitable means.
- (b) Every worker employed in areas where the noise exceeds the maximum permissible exposure levels specified in sub-clause (1) shall be subjected to any auditory examination by a Certifying Surgeon within 14 days of his first employment and thereafter, shall be re-examined at least once a every 12 months. Such initial and periodical examinations shall include tests which the Certifying Surgeon may consider appropriate and shall include determination of auditory thresholds for pure tones of 125, 250, 500, 1000, 2000, 4000 and 8000 cycles per second.

Part-B High Vibration Levels:

1. Applications

This part of the Schedule shall apply to all operations in a manufacturing part of the process having high undesired vibrations.

2. Definition:

- (a) “daily exposure” means the quantity of mechanical vibration to which a worker is exposed during a working day, which takes account of the magnitude and duration of the vibration;
- (b) “Vibration” means a mechanical phenomenon where by oscillations occur about equilibrium point. The oscillations may be periodic or random.
- (c) “high vibration” means any exposure greater than the exposure limit value and action value specified in clause-3.
- (d) “exposure action value” means the level of daily exposure set out in clause-3 for any worker which, if reached or exceeded, requires specified action to be taken to reduce risk;
- (e) “exposure limit value” means the level of daily exposure for any worker which must not be exceeded, as specified in sub clause-3
- (f) “hand-arm vibration” means mechanical vibration which is transmitted into the hands and arms during a work activity’
- (g) “mechanical vibration” means vibration occurring in a piece of machinery or equipment or in a vehicle as a result of its operation; and
- (h) “whole-body vibration” means mechanical vibration which is transmitted into the body, when seated or standing, through the supporting surface, during a work activity or as described in sub clause 3 (2).

3. Exposure Limit Values and Action Values.

- (1) For hand-arm vibration –
 - (a) the daily exposure limit value is 5 m/s² A(8);
 - (b) the daily exposure action value is 2.5 m/s² A(8);and daily exposure shall be ascertained on the basis set out in the relevant National/International Standards specified in table 1 below.
- (2) For whole body vibration -
 - (a) the daily exposure limit value is 1.15 m/s² A(8);
 - (b) the daily exposure action value is 0.5 m/s² A(8),and daily exposure shall be ascertained on the basis set out in the relevant National/International Standards.

Table I

The Threshold Limit Values (TLVs) for exposure of the hand to vibration in X, Y or Z direction of axes in the three dimensional system shall be as given below:

Total Daily Exposure Duration (hours)	Maximum value of frequency weighted acceleration (m/s ²) in any direction
4 to less than 8 hours	4
2 to less than 4 hours	6
1 to less than 2 hours	8
Less than 1 hour	12

- (3) Assessment of vibration exposure shall be made for each applicable direction (X,Y,Z) since vibration is a vector quantity (magnitude and direction). In each direction, the magnitude of the vibration during normal operation of the power tool, machine or work piece should be expressed by the root-mean-square (RMS) value of the frequency – weighted component acceleration, in units of meter per second squared (m/s²)

4. Assessment of Risk to Health due to Vibration at the Work Place.

- (a) An occupier who carries out work which is liable to expose any worker from vibration shall make a suitable and sufficient assessment of the risk created by that work to the health and safety of those and the risk assessment shall identify the control measures that need to be taken.
- (b) The Risk assessment should be reviewed whenever it is felt the changes in the process makes the earlier risk assessment no longer valid.

5. Engineering Control Measures.

- (1) The occupier shall ensure that risk from the exposure of workers to vibration is either eliminated at source or, where this is not reasonably practicable, reduced to as low a level as is reasonably practicable.
- (2) Where it is not reasonably practicable to eliminate risk at source pursuant to paragraph (a) and an exposure action value is likely to be reached or exceeded, the employer shall reduce exposure to as low a level as is reasonably practicable by establishing and implementing a programme of engineering control measures which are appropriate to this type of activity.

- (3) The occupier shall ensure that the workers are provided with the following measures.
 - (a) Work equipment of appropriate ergonomic design which, taking account of the work to be done, produces the least possible vibration;
 - (b) the provision of auxiliary equipment which reduces the risk of injuries caused by vibration; and install appropriate maintenance programmes for work equipment, the workplace and workplace systems;
- (4) Subject to sub clause 5, the employer shall ensure that his employees are not exposed to vibration above an exposure limit value; and shall take necessary to identify the reasons for the limit being exceeded and take appropriate steps to reduce the exposure to vibration to below limit value.

Provided that where the exposure of an employee to vibration is usually below the exposure action value but varies markedly from time to time and may occasionally exceed the exposure limit value.

Further provided that – any exposure to vibration averaged over one week is less than the exposure limit value and there is evidence to show that the risk from the actual pattern of exposure is less than the corresponding risk from constant exposure at the exposure limit value; and that the (b) risk is reduced to as low a level as is reasonably practicable, taking into account the special circumstances.

6. Medical Examination.

- (1) The occupier shall ensure that the workers who are likely to be exposed to vibration at above exposure action value are subjected to periodical medical examination once in a year. The medical examination shall include general and physical examination as well as special test for Reynaud's phenomenon.
- (2) The health record of workers shall be maintained by the occupier for a period of 5 years from the date of last test and produce to the Inspector of Factories on demand.
- (3) If at any time the certifying Surgeon/Factory Medical Inspector is of the opinion that the worker is no longer fit to work in the said process on the ground that continuance daring would involve danger to the health of the worker he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person declared unfit in such circumstances shall be provided with alternate placement facility unless he is fully incapacitated in the opinion of the Certifying Surgeon in which case the person affected shall be suitably rehabilitated.

7. Personal Protective Equipment.

- (1) The occupier shall ensure that the worker who are likely to be exposed to high level of vibration are provided with appropriate PPE and protective clothing confirming to national or international standards. Such Personal Protective Equipment should include hand gloves and safety shoes. The protective clothing shall be able to protect the workers from cold and damp.

- (2) The occupier shall ensure that workers are given periodical training in the use, care and maintenance of the Personal Protective Equipment.

8. Administrative Control Measures.

- (1) The occupier shall ensure that as far as reasonably practicable as all necessary control measures are taken to ensure that the unwanted vibrations does not affect the health of the workers employed in the process to which this part of schedule apply.
- (2) The occupier shall provide all workers with information instruction and training to be adopted to limit the exposure limit values and action values as set out in sub clause -3.
- (3) Without prejudice to the generality of paragraph (1), the information, instruction and training provided under that paragraph shall include-
- (i) the exposure limit values and action values set out in sub clause-3.
 - (ii) safe working practices to minimise exposure to vibration; and
 - (iii) suitable and sufficient information and training for employees, such that work equipment may be used correctly and safely, in order to minimise their exposure to vibration;
 - (iv) limitation of the duration and magnitude of exposure to vibration;
 - (v) appropriate work schedules with adequate rest periods; and
 - (vi) The information, instruction and training required by paragraph (2) shall be updated to take account of significant changes in the type of work carried out or the working methods used by the employer.
- (4) The Occupier shall display pictorial cautionary notices/warning signs at conspicuous places where there are possibilities of workers being exposed to undesired high vibrations

9. Prohibition in Employment of Women, Young Persons and Persons with Disabilities.

No women or young person or persons with disabilities shall be employed in the process covered by this part of the schedule.

- 10. Exemptions.** If in respect of any factory, the Chief Inspector is satisfied that owing to any exceptional circumstances, or infrequently of the process, or for any other reason, application of all or any of the provisions of this schedule is not necessary for the protection of the persons employed in such factory, he may by an order in writing which he may at his discretion revoke, exempt such factory from all or any of the provisions on such conditions and for such period as he may specify in the said matter.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)

Dr. SHASHANK GOEL,
PRINCIPAL SECRETARY TO GOVERNMENT

To
The Commissioner of Printing, Stationary and Stores Purchases (PW),
Chanchalguda, Hyderabad (with a request to furnish 20 copies of the final notification).

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The Director of Factories, Telangana, Hyderabad

Copy to:

The P.S. to Special Secretary to Chief Minister

The P.S. to Minister (Labour & Employment)

The Law (F) Department

S.C.

// FORWARDED :: BY ORDER //

SECTION OFFICER